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August 01, 2002

Mr. William H. Stevens, Hearing Officer
Massachusetts Department of Telecommunications and Energy
One South Station
Boston, MA 02110

Re: Massachusetts Department of Telecommunications and Energy's Order Opening Investigation Into Distributed Generation (Distributed Generation NOI, D.T.E. 02-38)

Dear Mr. Stevens:

The Massachusetts Department of Environmental Protection (DEP) appreciates the opportunity to submit comments regarding the Massachusetts Department of Telecommunications and Energy's Order Opening Investigation Into Distributed Generation.

We commend the Massachusetts Department of Telecommunications and Energy (DTE) for its support of distributed generation (DG) as a viable electricity generation mechanism in the context of the Massachusetts Electric Utility Restructuring Act. We believe DG can help address issues such as local congestion, peak load needs, and emergency generation. While promoting distributed generation can help resolve a number of energy-related concerns, and with appropriate regulations, guidelines, and incentives, it can promote clean energy production technologies such as photovoltaics, there are several areas of concern that DEP believes should be addressed. DEP appreciates the issues that DTE has raised in its investigation order (D.T.E. 02-38) and requests that the following environmentally significant points be considered in DTE's investigation:

Air Emissions and the Impact of DG on Air Quality

1. Potential for diesel engines to have higher emissions compared to other engines

Proliferation of distributed generation from engines with high air emissions (such as uncontrolled or old diesel generators) can adversely affect air quality. These engines' emissions of nitrogen oxides (NOx), for example, can be 20 times higher than other engines. Compared to gas cogeneration units with selective catalytic reduction systems installed (for controlling nitrogen oxides), uncontrolled diesel generators have emissions orders of magnitude higher.

DEP's current permitting requirements for DG vary according to the size and intended use of the engines. We have discussed these regulations with DTE staff on occasion and would be happy to continue those discussions if particular questions or concerns arise. DEP is also working with ISO-NE to allow emergency generators to participate in the Region's Class I program this summer and indicated its support for that program in a letter from me to Steve Whitley. A copy of that letter is enclosed for your reference.

2. Impacts of DG units on local air quality

The air emissions problem from DG could be even more significant in certain load pockets with transmission congestion, areas that have problems meeting their peak load electricity needs, and are more likely to be interested in siting distributed generation. Many such areas are urban and already have high air quality burdens due to transportation, commercial, and industrial impacts. In highly commercial and urban areas, building design can be another contributor to the air quality problem. High buildings entrap the air and reduce dispersion of the pollutants. Addition of significant air emissions from DG engines with short stacks can further deteriorate the air quality in these areas due to poor dispersion at ground level.

3. Peak generation and impact on ozone levels

Extensive displacement of peak power from gas cogeneration by DG diesel engines would lead to an environmentally undesirable outcome. Since peak power generation periods coincide with the times when ozone generation potential is high (summer afternoons), significant generation from high emitting DG could exacerbate ozone conditions. Ozone generation is often already high on hot summer afternoons, when the need for electric power peaks. Additional generation of fine particulate matter, ozone precursors, and other pollutants could have a significant adverse health impact on the local population.

4. Potential effects of DG on Climate Change

Carbon dioxide (CO2) is one of the pollutants responsible for global warming. As part of our work with Conference of New England Governors and Eastern Canadian Premiers, we are seeking ways of reducing greenhouse gas emissions. Reducing the CO2 emissions from the electricity sector, through increasing clean distributed generation, could play a significant role in meeting this goal.

5. Noise concerns

Currently, DEP regulates the noise from electric power generators through their Plan Approval[1] permits. For example, in a Plan Approval, DEP may require the owner/operator of electric generation units to a) install state-of-the-art noise-abatement equipment and exhaust silencers; b) ensure that the individual and/or combined noise from the generator set(s) during routine and emergency operations does not exceed the Department's noise policy[2]; and c) conduct initial noise surveys that monitor each and combined effect of the generator sets operating under representative operating conditions. In cases when no Plan Approval is required for the unit, DEP addresses noise issues in an individual case as the need arises.

Small DG sources (such as diesel and other generators such as wind turbines) can cause noise problems especially if several units operate in the same location. The number of the DG units that operate at a particular time in a given location may vary, leading to a variable level of uncontrolled noise. This poses problems with anticipating the level of noise and assessing the noise abatement requirements on individual units. The control of the noise problem is compounded by the following factors: a) not all diesel DG engines are required to have a Plan Approval (as mentioned previously this requirement depends on the size and intended use of the engines); and b) these units may belong to various owners.

[1] Plan Approval permits are required to construct and operate a facility.
[2] DEP Noise Policy 90-001

Noise related problems can be very contentious in the affected neighborhood; and often, the local board of health and the Department of Environmental Protection become involved in addressing the problem. DEP can regulate sources of nuisance noise under its current general regulations [3] and may specifically address this issue in the context of DG should it become a widespread concern. Since noise can be a significant problem associated with proliferation of DG, DEP would like to request that DTE include the investigation of this issue in its Order.

6. Possible steps DEP may take to regulate air emissions from distributed generation

In order to promote the design, construction and installation of clean DG options, MA DEP is participating in a project developing a national model regulation for clean DG. The Regulatory Assistance Project (RAP), under contract to DOE's National Renewable Energy Laboratory (NREL), has undertaken a collaboration to design such a national model rule and regulatory options to reduce the environmental impacts of distributed generation[4]. This national model is due to be completed in Summer 2002. DEP intends to evaluate the necessity and feasibility of the RAP Model Rule in the context of its current regulations and may propose additional regulations that would address air emissions from distributed generation sources.

Clean distributed generation, which utilizes innovative technologies such as photovoltaics and fuel cells, can, with proper regulatory oversight, be a reliable and efficient addition to our electricity production resources. Moving electricity generation closer to where the power is used can assist in reducing emissions. However, there would be a net emissions reduction only if clean distributed generation is utilized. Regulatory barriers can hinder the development of clean DG and the technologies that support it. We would like to emphasize the role of DTE and DEP in reducing such barriers.

Again, we thank the DTE for the opportunity to comment on this Order and look forward to collaborating with the DTE to incorporate measures in distributed generation regulatory requirements and standards that would reduce barriers to, and help enhance, the use of clean distributed generation while improving the environment and protecting the health and safety of Massachusetts' citizens. If you have any questions on these comments, please contact Azin Kavian at 617-574-6801.

Sincerely,

James C. Colman
Assistant Commissioner, BWP

cc: Paul B. Vasington, Chairman, Massachusetts Department of Telecommunications and Energy
David L. O'Connor, Commissioner, Division of Energy Resources
Regina McCarthy, Assistant Secretary, EOEA
Edward P. Kunce, Deputy Commissioner, DEP
Nancy L. Seidman, Division Director, BWP
Ken Colburn, NESCAUM

[3] DEP regulates noise under 310 CMR 7.10(1).
[4] The RAP Draft Distributed Generation Model Rule can be obtained form: http://www.rapmaine.org/DREmissionsRuleNovDraft.PDF.